
Network control

Network control is an enhancement to the NCOS feature that extends NCOS controls to users located at ESN main switches. Network control requires that the ESN main and serving ESN node be equipped with the NSIG feature.

ESN main NCOS

Users (lines, trunks, attendants) at an ESN main are assigned an NCOS, which is used to determine their level of access to network facilities at the serving ESN node. When a user at an ESN main initiates a call to, or through, an ESN node, the user's assigned NCOS can be transmitted on TCOS, depending on tie trunk settings (ESN, ESN2, etc.). If the user's NCOS is transmitted to the serving node and the node is equipped with BARS, only NCOS 0–7 can be assigned at the node. Therefore, only NCOS 0–7 should be assigned at the ESN main even though an ESN main with NSIG can have NCOS 0–15.

If the node is equipped with NARS, then NCOS 0–15 can be assigned both at the node and at the ESN main. The transmitted NCOS (or TCOS) overrides the NCOS (or FRL) assigned to the incoming tie trunk group at the node, and is used to determine the user's eligibility for network resources/features at the ESN node. Thus, a user at an ESN main has the same network access capabilities as a user at the ESN node who is assigned the same NCOS.

Note: If the user at the ESN main enters a valid authorization code prior to placing a NARS call, the NCOS associated with the authorization code is transmitted to the ESN node in place of the user's assigned NCOS.

Calls from a Conventional main to the ESN node are controlled by the NCOS assigned to the incoming trunk group at the ESN node, since the Conventional main does not have NSIG.

ESN node TCOS

Network Control at an ESN node can provide a Traveling Class of Service (TCOS) mechanism that controls route access and Off-Hook Queuing (OHQ) eligibility for calls placed to or through another ESN node or an associated ESN main, and enables the ESN node to interface with switches that are part of an ETN. Provided that the SIGO setting on the tie trunk is set for ETN at both ends.

The Traveling Class of Service is, in effect, the FRL of a user's assigned NCOS. When a user at an ESN node initiates a call to another ESN node or an ESN main, the TCOS (for example, the FRL of the user's assigned NCOS) is transmitted to the other ESN node. At the receiving ESN node, the TCOS (0–7) replaces the FRL of the NCOS assigned to the incoming trunk group.

Route access and OHQ eligibility for the call are, therefore, based on the NCOS of the incoming trunk group with the modified FRL (for example, TCOS).

Note: The Network Control (NCTL) data block (LD 87) is used to define OHQ eligibility on a per FRL (TCOS) basis. For example, if FRL 4 is defined as OHQ eligible, then all users who have an NCOS with a FRL of 4 are eligible for OHQ on calls placed to another ESN node or to an associated ESN main.

If a user at an ESN main or Conventional main initiates a call that tandems through the serving ESN node to another ESN node or ESN main, TCOS applies to the call as if the call originated at the serving ESN node.

ETN switch compatibility

The TCOS is equivalent to the Traveling Class Mark (TCM) used at ETN switches. See Technical Publication 42709, "TIE Trunk Signaling Compatibility for Connecting to a DIMENSION PBX," July 1979.

When a 10-digit UDP call or Distance Steering Code (DSC) CDP call is made from an ESN node to an ETN switch, the dialed digits, together with the TCOS number (0–7), are sent to the connected ETN switch. At the ETN switch, the TCOS number received from the ESN node is used as a TCM to determine route access and off-hook queuing eligibility at the ETN switch.

Similarly, when a call is made from an ETN switch to an ESN node, the dialed digits, together with the TCM number (0–7), are sent to the connected ESN node. The ESN node interprets the received TCM number as a TCOS number. The received TCM (for example, TCOS) replaces the FRL of the NCOS assigned to the incoming trunk group from the ETN switch. This new FRL (for example, TCM) is then used to determine route access and off-hook queuing eligibility for the call.

However, if a DSC CDP call is terminated on an switch as a Local Steering Code (LSC) call, the TCOS value transmitted by the connected switch will not be collected and saved by this switch.

